



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/842,417
Filing Date: April 25, 2001
Applicant: Ritter et al.
Group Art Unit: 3737
Examiner: Crystal I. Leach
Title: Open Field System for Magnetic Surgery
Attorney Docket: 5236-000227

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

**APPEAL BRIEF
UNDER 37 C.F.R. § 41.37**

Sir:

The Notice of Appeal in this Application was mailed on February 12, 2007. This brief is submitted with the fee required under 37 C.F.R. §1.17(f).

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APPELLANT'S BRIEF ON APPEAL

Pursuant to 37 C.F.R. § 41.37, Applicants submit their Brief on Appeal, as follows:

REAL PARTY IN INTEREST – UNDER 37 C.F.R. § 41.37(c)(1)(i)

The real parties in interest in this appeal are Stereotaxis, Inc., a Delaware corporation, having a place of business at 4320 Forest Park Avenue, Suite 100, St. Louis, MO 63108, by virtue of an assignment to Stereotaxis recorded at Reel 010112, Frame 0932.

RELATED APPEALS & INTERFERENCES - UNDER 37 C.F.R. § 41.37(c)(1)(ii)

To the best of Appellants' knowledge, no other appeals or interferences are pending which will directly affect, be directly affected by or have a bearing on the Board's decision in the present pending appeal.

STATUS OF THE CLAIMS – UNDER 37 C.F.R. § 41.37(c)(1)(iii)

On February 12, 2007, Appellants appealed from the final rejection of Claims 16, 19, and 21-23.

- A copy of the claims presently being appealed (i.e., Claims 16, 19, and 21-23) is provided in the attached Claims Appendix.

- A copy of the Final Office Action mailed August 9, 2006 placing claims 3-23 under final rejection is provided in the attached Evidence appendix.

STATUS OF AMENDMENTS – UNDER 37 C.F.R. § 41.37(c)(1)(iv)

A Final Office Action was mailed August 9, 2006. Subsequently, a first Amendment after Final was mailed August 31, 2006, in response to which an Advisory Action was mailed October 3, 2006, indicating that the Amendment After Final would not be entered for purposes of appeal. A second Amendment after Final was mailed October 12, 2006, in response to which an Advisory Action was mailed February 6, 2006, indicating that the Amendment After Final would be entered for purposes of appeal and that Claims 16, 19 and 21-23 are rejected.

SUMMARY OF THE CLAIMED SUBJECT MATTER – UNDER 37 C.F.R. § 41.37(c)(1)(v)

Independent Claim 16

A system for applying a magnetic field to a patient's body sufficient for orienting a magnetically responsive element of a magnetic medical device to magnetically navigate the magnetically responsive element in the patient's body, the system comprising:

a patient support for supporting a patient, comprising a bed having a head and a foot;

a magnet assembly comprising a support adjacent the patient support, and four electromagnets mounted on the support and arranged substantially in a vertical plane, wherein the magnet assembly is positioned at the head of the bed.

With regard to independent claim 16, the elements of this claim are disclosed in Fig. 47 and paragraphs 139-142 of the present application:

[0139] A fourth embodiment of an inventive open field magnetic surgery system constructed according to the principles of this invention is indicated generally as 400 in FIGS. 47-50. The system 400 comprises a patient support 402, a magnet assembly 404, and a CT imaging assembly 406.

[0140] The patient support 402 preferably comprises an elongate bed 410 mounted on a pedestal 412. The foot of the bed 410 is oriented toward the front of the system and the head of the bed is oriented toward the rear of the system. The head of the bed 410 is narrower than the foot of the bed so that it can fit inside the magnet assembly 404 and accommodate the imaging devices of the imaging assembly 406. The bed 410, is preferably moveable with respect to the pedestal 412 to allow the patient to be moved relative to the magnet assembly. The bed can be moved into and out of the system; raised and lowered, and rotated about its longitudinal axis. Other movements can be provided to facilitate positioning the patient relative to the operating volume of the magnet assembly.

[0141] The magnet assembly 404 comprises a plurality (in this fourth preferred embodiment four) magnet coils 414 arranged on planar support 416, on a base 418. The magnet coils 414 are capable of generating a magnetic field in an operating region of sufficient strength to navigate a magnetic medical in the portion of the patient within the operating region. The coils may all have parallel axes, but this is not essential and some or all of the coils may be oriented out of the plane of planar support 416.

[0142] The imaging assembly 406 comprises a compact CT imaging device 420 adapted to provide real time or near real time CT images of the operating region. The CT imaging device 420 has an opening 422 through which a portion of the patient support 402 and/or the patient can extend to allow the surgeon to bring virtually any portion of the patient's body within the operating region of magnet assembly 404. The CT imaging device is one that is not significantly affected by the proximity of the magnets 414.

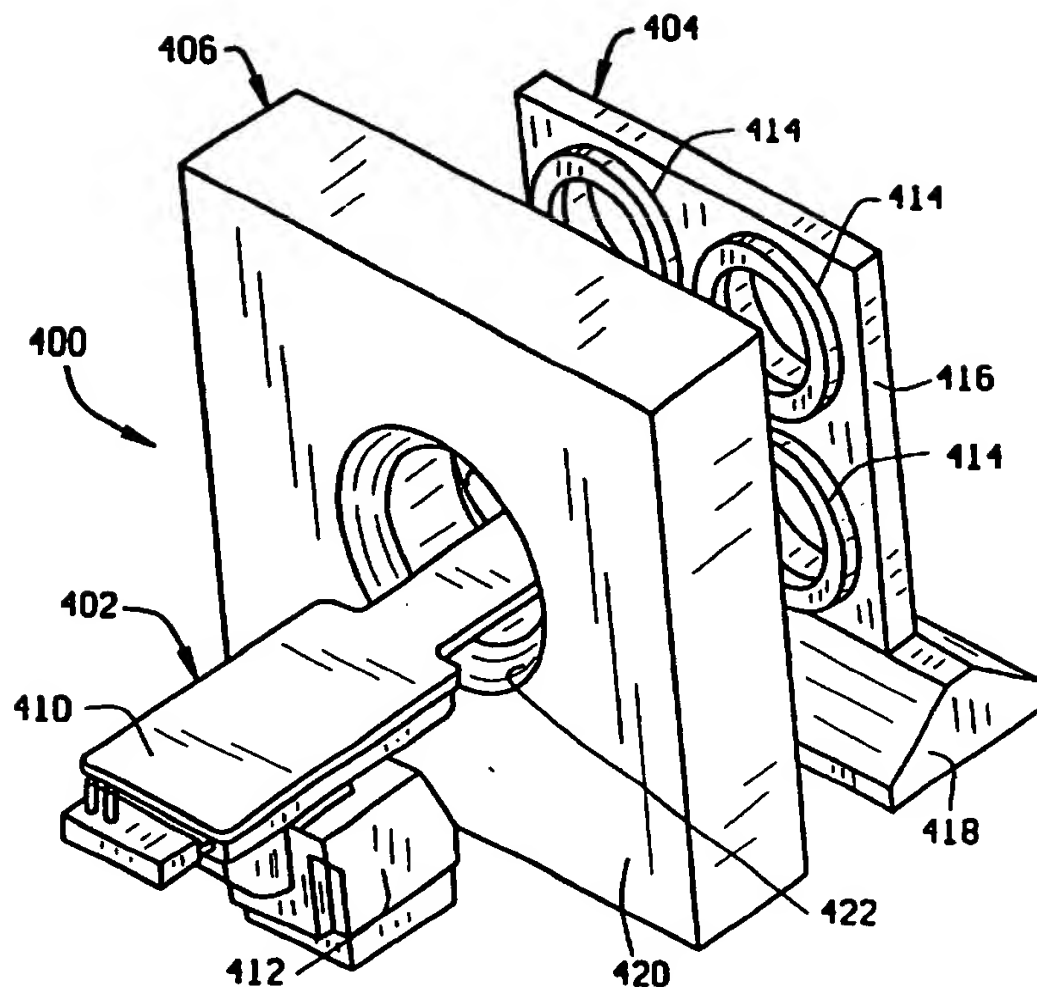


FIG. 47

Independent Claim 19

A system for applying a magnetic field to a patient's body sufficient for orienting a magnetically responsive element of a magnetic medical device to magnetically navigate the magnetically responsive element in the patient's body, the system comprising:

a patient support for supporting a patient comprising a bed having a head and a foot;

a magnet assembly comprising a generally planar support adjacent the patient support, and four electromagnets mounted on the planar support and arranged substantially in a vertical plane on the planar support, the four electromagnets arranged in two rows of two electromagnets, wherein the magnet assembly is positioned at the head of the bed.

With regard to independent claim 19, the elements of this claim are also disclosed in Fig. 47 and paragraphs 139-142 of the present application:

[0139] A fourth embodiment of an inventive open field magnetic surgery system constructed according to the principles of this invention is indicated generally as 400 in FIGS. 47-50. The system 400 comprises a patient support 402, a magnet assembly 404, and a CT imaging assembly 406.

[0140] The patient support 402 preferably comprises an elongate bed 410 mounted on a pedestal 412. The foot of the bed 410 is oriented toward the front of the system and the head of the bed is oriented toward the rear of the system. The head of the bed 410 is narrower than the foot of the bed so that it can fit inside the magnet assembly 404 and accommodate the imaging devices of the imaging assembly 406. The bed 410, is preferably moveable with respect to the pedestal 412 to allow the patient to be moved relative to the magnet assembly. The bed can be moved into and out of the system; raised and lowered, and rotated about its longitudinal axis. Other movements can be provided to facilitate positioning the patient relative to the operating volume of the magnet assembly.

[0141] The magnet assembly 404 comprises a plurality (in this fourth preferred embodiment four) magnet coils 414 arranged on planar support 416, on a base 418. The magnet coils 414 are capable of generating a magnetic field in an operating region of sufficient strength to navigate a magnetic medical in the portion of the patient within the operating region. The coils may all have parallel axes, but this is not essential and some or all of the coils may be oriented out of the plane of planar support 416.

[0142] The imaging assembly 406 comprises a compact CT imaging device 420 adapted to provide real time or near real time CT images of the operating region. The CT imaging device 420 has an opening 422 through which a portion of the patient support 402 and/or the patient can extend to allow the surgeon to bring virtually any portion of the patient's body within the operating region of magnet assembly 404. The CT imaging device is one that is not significantly affected by the proximity of the magnets 414.

GROUND FOR REJECTION TO BE REVIEWED ON APPEAL – UNDER 37 C.F.R. § 41.37(c)(1)(vi)

Appellants present the following issues for review:

1. Is the invention set forth in Claims 3 and 5-23 anticipated by Frei et al. (U.S. Pat. No. 3,358,676).
2. Is the invention set forth in Claim 4 non-obvious over Frei et al. in view of Arenson et al. (U.S. Pat. No. 6,304,769).

ARGUMENT – UNDER 37 C.F.R. § 41.37(c)(1)(vii)

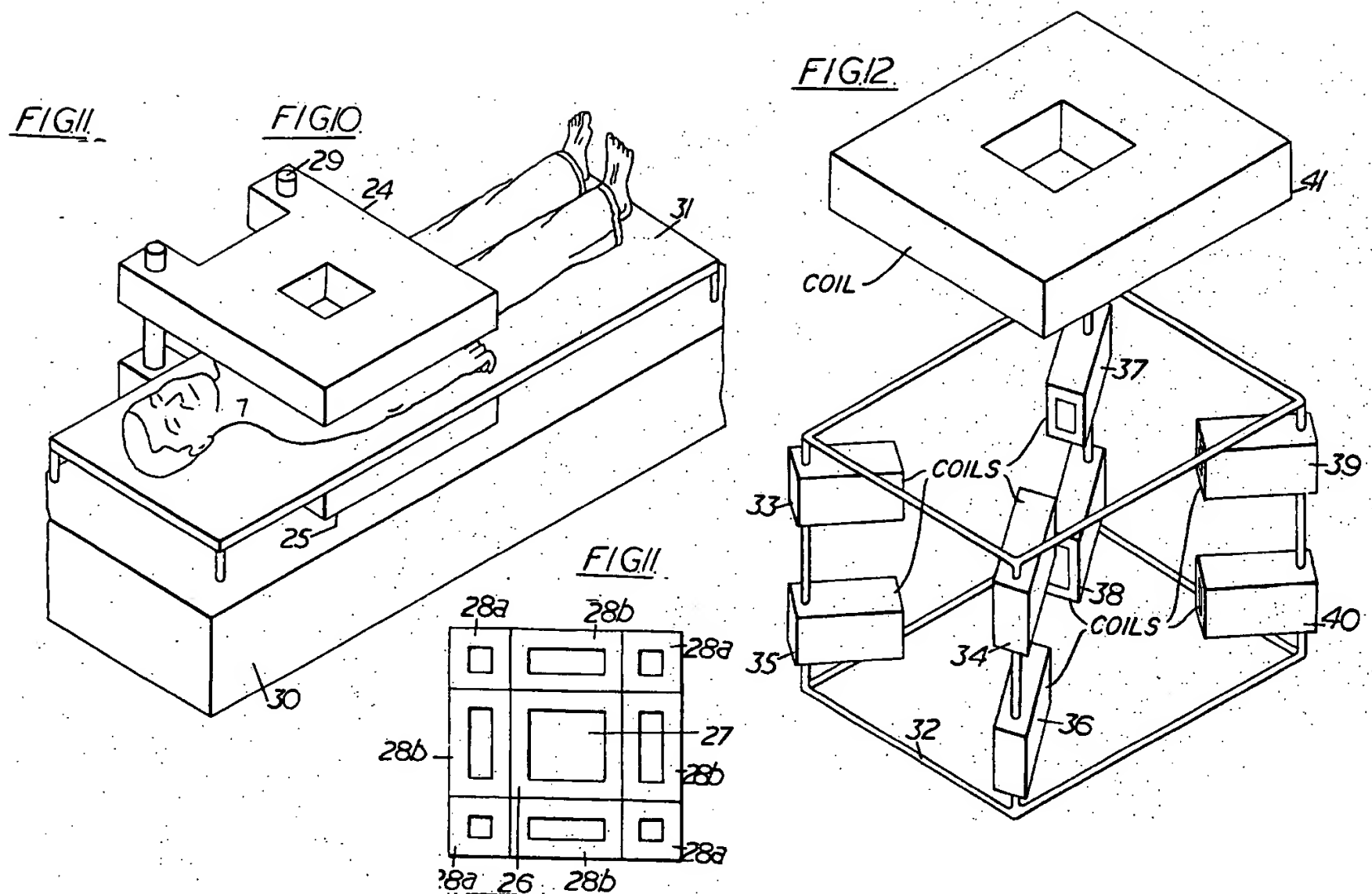
1. 1st GROUND OF REJECTION ON APPEAL

Pursuant to 37 C.F.R. § 41.37(c)(1)(vii), the following provides the contentions of appellants with respect to the 1st ground of rejection above presented for review in accordance with 37 C.F.R. § 41.37(c)(1)(vi).

I. Frei et al. Fails to Disclose all the Claim Limitations

Claims 16 and 19

Appellants initially note that the reference Frei relied upon for the above rejection now under appeal neither teaches nor suggests a system that includes four magnets arranged substantially in a vertical plane on the planar support, where the magnets apply a magnetic field to a patient's body sufficient for orienting a magnetically responsive element of a magnetic medical device.

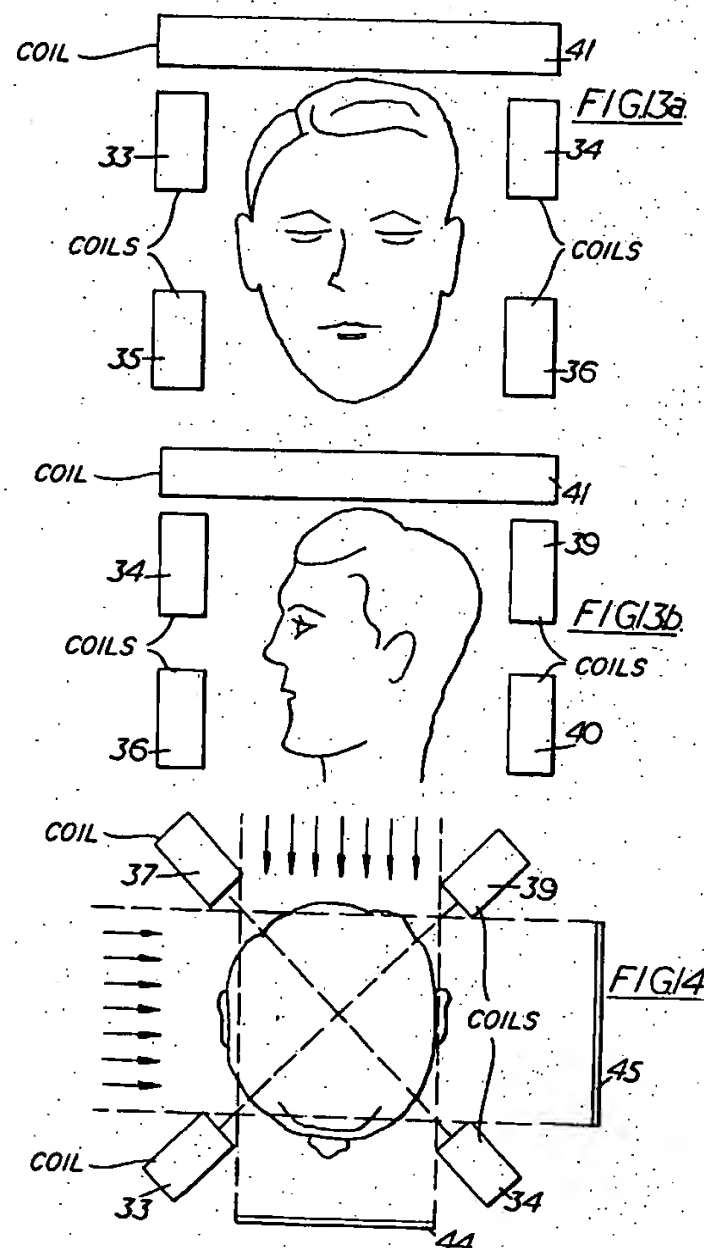


The Final Office Action states on page 3 that coils are located at the corners of the planar support (Figure 11, elements 28a shown above), and that the plane of the support may be either horizontal, as shown in Figure 11, or vertical, as shown in the plane made by the support structure of Figure 12. However, Frei only shows a single coil 41 in Figure 12. Figure 12 does not show a planar support, or four coils on the planar support arranged in a vertical plane. Rather, Figure 12 shows a single coil 41 that is merely positioned in a horizontal orientation.

Moreover, the single coil 41 works in conjunction with *separately located* coils 33, 35, 39 and 40 that *moveably propel* an element. This is not the same as

the system claimed having four coils arranged in a vertical plane, which apply a magnetic field sufficient for orienting a magnetically responsive element of a medical device to point the device in a desired direction.

Furthermore, Figure 11 of Frei shows a patient interposed between *horizontal* plate structures 24, 25, each comprising a plurality of coils 26, 28a. (Col. 5, ll. 52-53). Accordingly, Frei teaches propelling an element within a patient using a system that requires the positioning of coils above or below a patient. Frei teaches the positioning of two plate structures/coil arrangements surrounding a patient as shown in Figure 11, or the use of a plurality of coils 33, 35, 39 40 and 41 surrounding a patient as shown in Figure 13 below. Both of these systems are more confining to patients than those systems in claims 16 and 19.



As such, the Appellant submits that Frei does not disclose a system for orienting a magnetically responsive element of a medical device in a patient's body, which includes four coils arranged substantially in a vertical plane on a planar support positioned at the head of a patient support bed, and therefore cannot anticipate claims 16 and 19. As such, the Appellant submits that claims 16 and 19 are distinguished from Frei, and are patentable for at least these reasons.

Claims 21-23

With regard to dependant claims 21-23, these claims depend from independent claim 19, which the Appellant believes to be allowable in view of the above remarks. As such, the Appellant submits that claims 21-23 are also allowable for at least these reasons.

2. 2nd GROUND OF REJECTION ON APPEAL

Pursuant to 37 C.F.R. § 41.37(c)(1)(vii), the following provides the contentions of appellants with respect to the 2nd ground of rejection above presented for review in accordance with 37 C.F.R. § 41.37(c)(1)(vi).

Claim 4

With regard to claim 4, this claim has been cancelled without prejudice, and therefore is not at issue in this present Appeal.

CONCLUSION

Appellant respectfully submits that the Examiner has not shown that claims 16, 19, and 21-23 are properly anticipated by Frei et al. Accordingly, reversal of the rejections of Claims 16, 19, and 21-23 are respectfully requested.

Respectfully submitted,



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Date: APRIL 10, 2007

CLAIMS APPENDIX
UNDER 37 C.F.R. § 41.37(c)(1)(viii)

1. - 15. (Cancelled)

16. (Previously Presented) A system for applying a magnetic field to a patient's body sufficient for orienting a magnetically responsive element of a magnetic medical device to magnetically navigate the magnetically responsive element in the patient's body, the system comprising:

a patient support for supporting a patient, comprising a bed having a head and a foot;

a magnet assembly comprising a support adjacent the patient support, and four electromagnets mounted on the support and arranged substantially in a vertical plane, wherein the magnet assembly is positioned at the head of the bed.

17. - 18. (Cancelled)

19. (Previously Presented) A system for applying a magnetic field to a patient's body sufficient for orienting a magnetically responsive element of a magnetic medical device to magnetically navigate the magnetically responsive element in the patient's body, the system comprising:

a patient support for supporting a patient comprising a bed having a head and a foot;

a magnet assembly comprising a generally planar support adjacent the patient support, and four electromagnets mounted on the planar support and arranged substantially in a vertical plane on the planar support, the four

electromagnets arranged in two rows of two electromagnets, wherein the magnet assembly is positioned at the head of the bed.

20. (Cancelled)

21. (Previously Presented) The system of claim 19, wherein the electromagnets all have parallel axes.

22. (Previously Presented) The system of claim 19, wherein the axis of at least one the electromagnets is not parallel with the axes of the other electromagnets, the at least one electromagnet being out of orientation of the plane of the planar support.

23. (Previously Presented) The system of claim 19 wherein the four electromagnets are capable of generating a magnetic field in an operating region that is sufficient to navigate a magnetic medical device in the portion of a patient that is within the operating region, and wherein the patient support is moveable and rotatable about its longitudinal axis to facilitate positioning of the patient relative to the operating region of the electromagnets.

EVIDENCE APPENDIX

UNDER 37 C.F.R. § 41.37(c)(1)(iX)

- A copy of the Office Action mailed August 9, 2006 placing the present application under final rejection is provided

RELATED PROCEEDINGS APPENDIX - UNDER 37 C.F.R. § 41.37(c)(1)(x)

NONE.